



Whitetail buck.

Hybridization of Mule Deer & White-tailed Deer

By Bill Jensen

Too often the facts surrounding wildlife topics get lost somewhere between the yellowing pages of peer-reviewed journal articles and the haze of bar room folk lore. Interbreeding of deer species is one such topic.

Since North Dakota is home to both white-tailed deer and mule deer, the Game and Fish Department often gets questions about whether this phenomenon occurs.

Q. Is hybridization of mule deer and white-tailed deer scientifically documented?

A. Yes, the first documented case was reported in 1898 in a Cincinnati zoo. Another early case was reported in a 1953 issue of *North Dakota OUTDOORS*. In 1952 the Roosevelt Park Zoo in Minot crossed a white-tailed buck with a mule deer doe, and produced hybrid fawns.

Q. Does hybridization of mule deer and white-tailed deer occur often?

A. No, if it did the distinction between the two species would be quickly lost. Normally, the cues to inducing breeding (e.g., scents, body language, and the response of the doe to courtship behavior by the buck) are different enough to prevent interbreeding between the species. These behavioral differences, coupled with poor survival rates of hybrid fawns, make the occurrence of true hybrids a rare event. It is interesting to note, however, that recent genetic analysis techniques have indicated that about 10,000 years ago Columbia black-tailed deer and white-tailed deer hybridized. The interbreeding of these two species (i.e., black-tailed bucks and white-tailed does) produced what we now call "mule deer." Only a few years ago, most biologists assumed that the black-tailed deer was derived from the hybridization of white-tailed deer and mule deer.

Most of the supposed "hybridized deer" that I have seen share a common feature, that being a 3x3 antler tine configuration on a mule deer. This antler configuration resembles that of a white-tailed deer with its characteristic forward sweeping main beams.

Q. How does hybridization occur?

A. Based upon documented observation, and recent development of new genetic analysis techniques, the most successful pairings occur between mule deer does and whitetail bucks. Whitetail bucks are apparently more assertive than mule deer bucks in their mate-tending behavior during the rut.

Q. What do hybrid deer look like?

A. Based on observations of hybrids produced in captive breeding facilities, males tend to most often produce an antler configuration similar to that of a white-tailed deer. Other characteristics – tail shape and color, coat color, metatarsal gland length – tend to be intermediate between the two species. Hybrids, at least

in some cases, lack the stiff-legged bouncing or stotting gait that is so characteristic of mule deer.

Q. Do the hybrid fawns survive as well as mule deer and white-tailed deer fawns?

A. In captivity, survival of hybrid fawns has been low. This factor suggests that fawn survival in the wild would be even lower, and would explain why adult hybrids are so rare. The incorporation of mule deer genetic material into the white-tailed deer population has been found in some studies, however, suggesting some fawns do survive. These fawns are presumably the result of whitetail bucks breeding with mule deer does. In order for this new genetic material to be maintained within the white-tailed deer population, these fawns would have to leave their maternal mule deer groups and associate more closely with other white-tailed deer.

Q. Where is hybridization most likely to occur?

A. Hybridization should most frequently occur where white-tailed deer and mule deer share a common range, and where white-tailed deer numbers rival mule deer numbers. In North Dakota, this area would include portions of the badlands, Missouri Slope, Missouri River breaks and portion of the Coteau.

Q. Is hybridization occurring at an increasing rate, and is it presenting a management problem for mule deer?

A. The expansion of white-tailed deer into traditional mule deer range, coupled with the aggressive behavioral characteristics of whitetail bucks, have led some biologists in Western states and provinces to suggest that mule deer may be slowly vanishing as a species, while other biologists simply dismiss these concerns. Nebraska and other states are currently collecting baseline genetic information to address this question. Once this information is collected, wildlife biologists will be able to periodically assess changes in genetic composition of their mule deer and white-tailed deer herds that share a common home range.

Q. What management techniques may be used to limit hybridization?

A. If hybridization were found to be a problem, the simplest approach would be to aggressively harvest white-tailed deer (particularly bucks) in the primary mule deer range.



In about 1990, the author harvested this mule deer buck south of Medora. The three tines on the left side would lead some hunters to believe it was a hybrid. It is just a mule deer where the back tine did not fork.



Mule deer doe.

Harold Umber

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